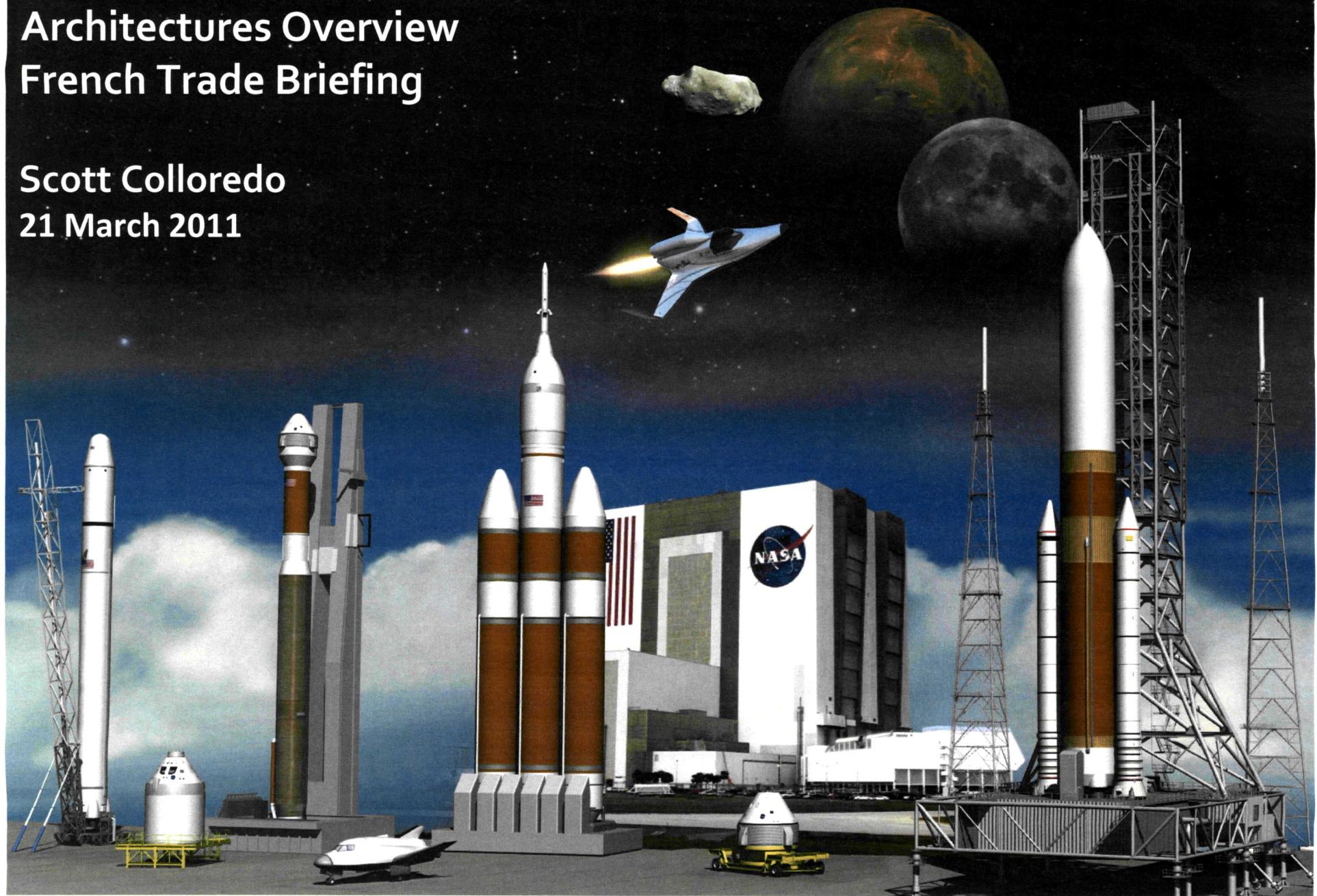


21st Century Space Launch Complex Architectures Overview French Trade Briefing

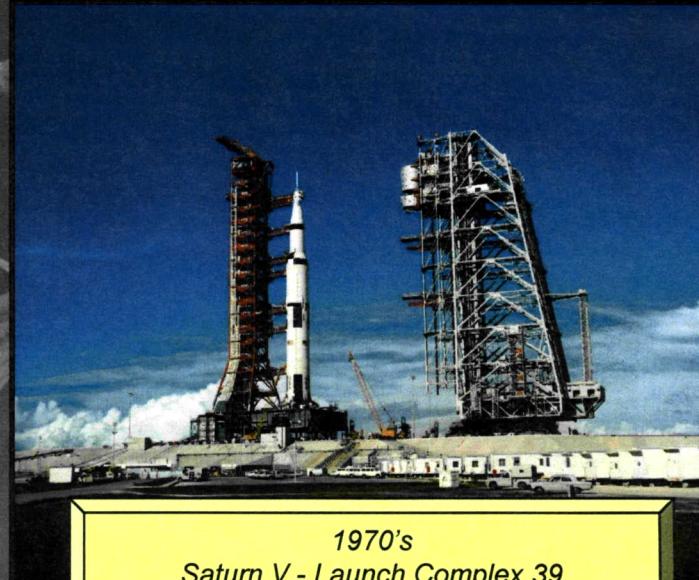
Scott Colloredo
21 March 2011



21st Century Space Launch Complex Kennedy Space Center, 1950 - 2020



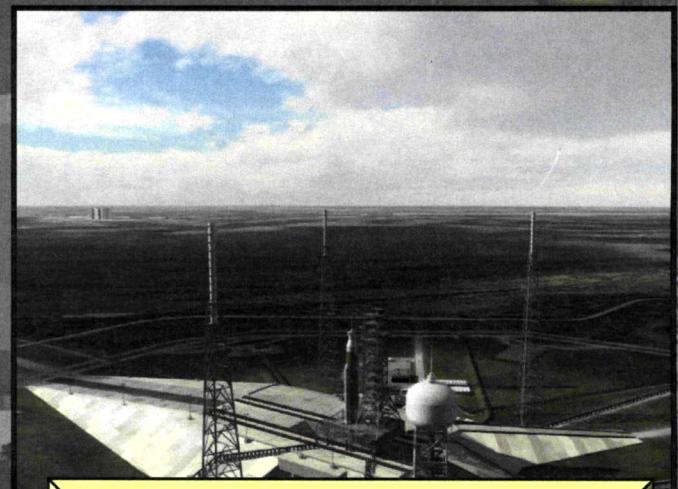
1950's
ICBM Row



1970's
Saturn V - Launch Complex 39



1980's - 2000's
Space Shuttle - Launch Complex 39



2010's
21st Century Space Launch Complex

21st Century Space Launch Complex

The Art of the Possible

21ST CENTURY SPACE LAUNCH COMPLEX

Kennedy Space Center

May 2010



21st Century Space Launch Complex

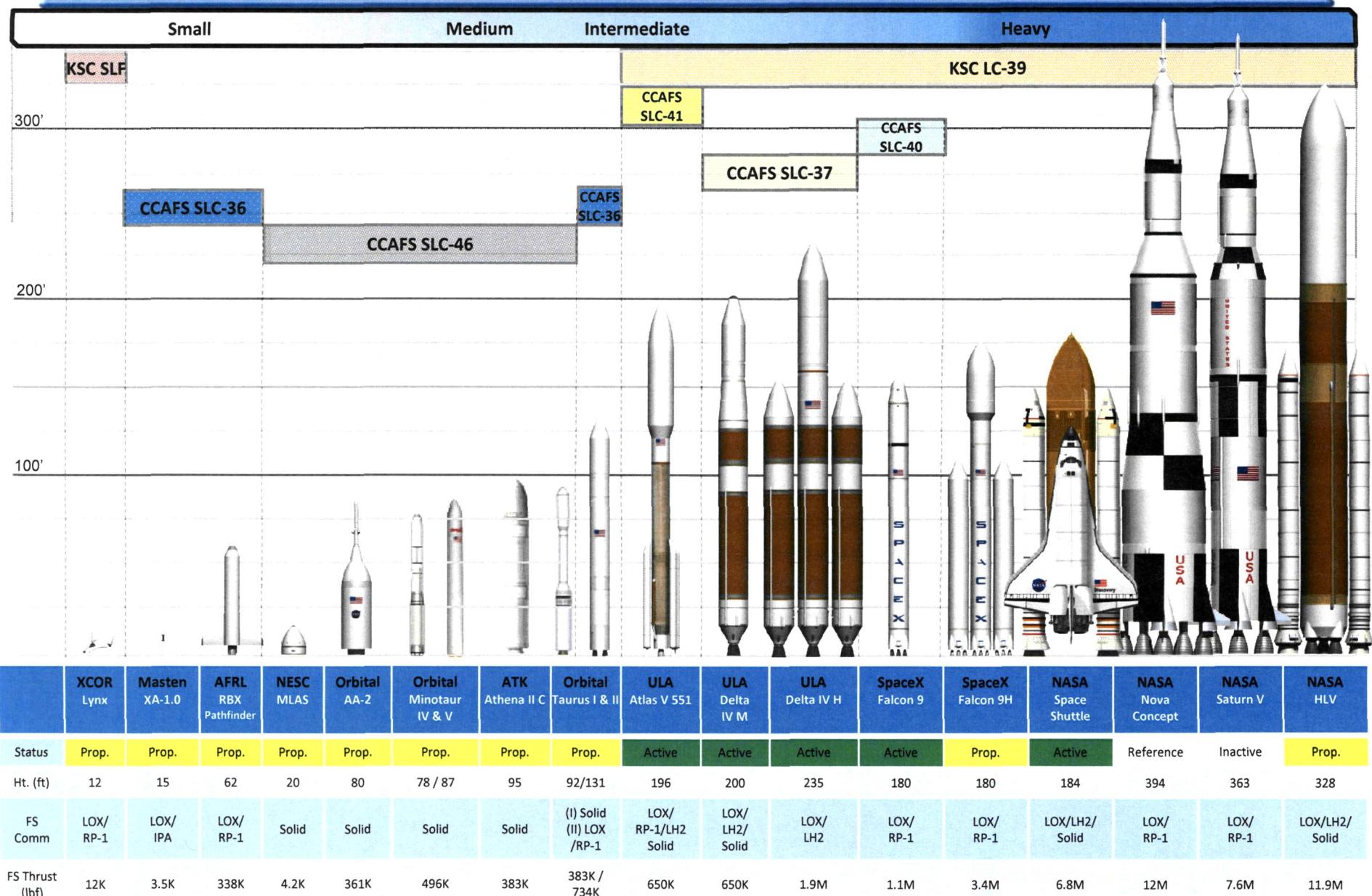
A Notional Launch Manifest





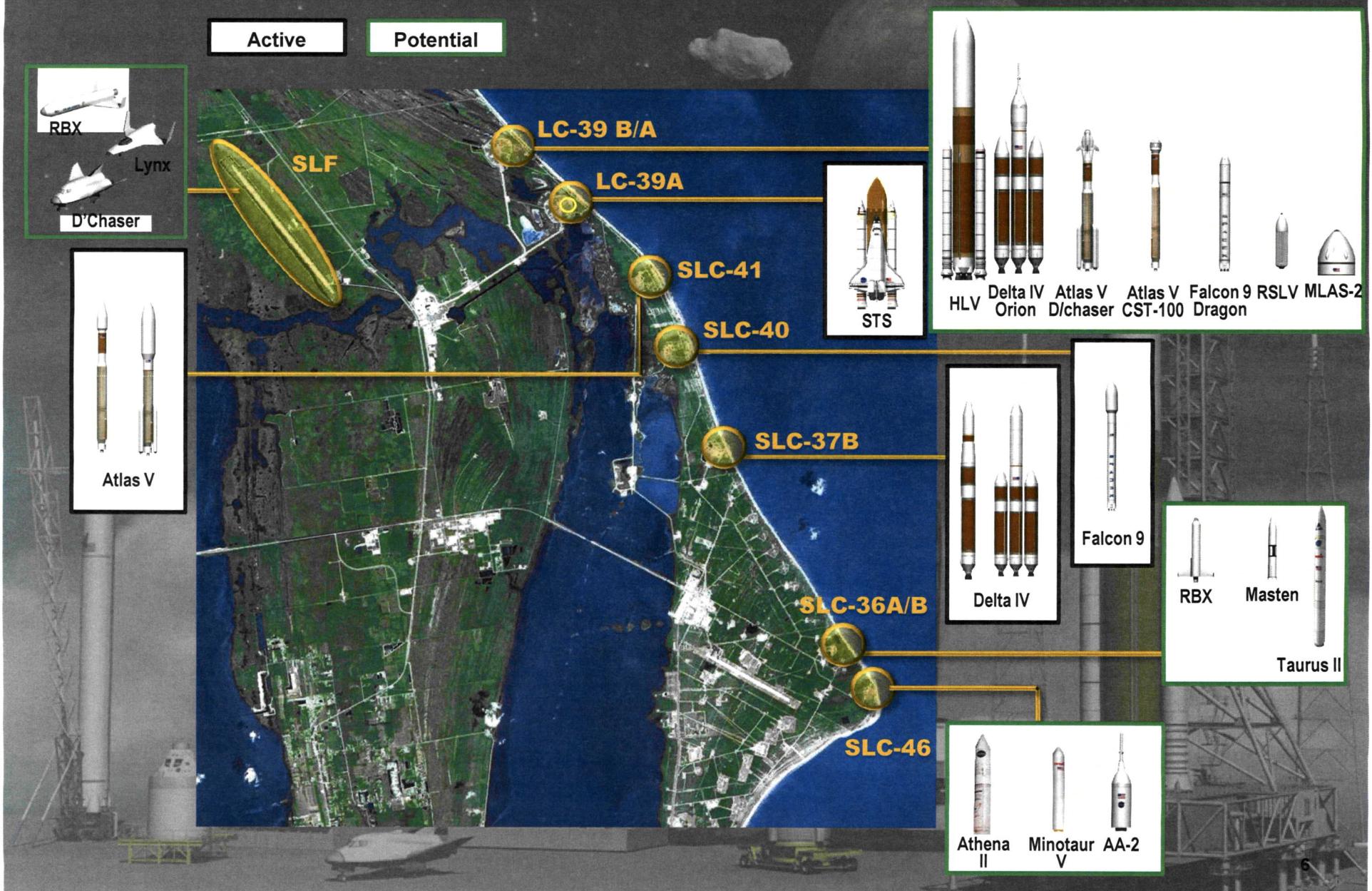
21st Century Space Launch Complex

A Launch Capability for Every Vehicle



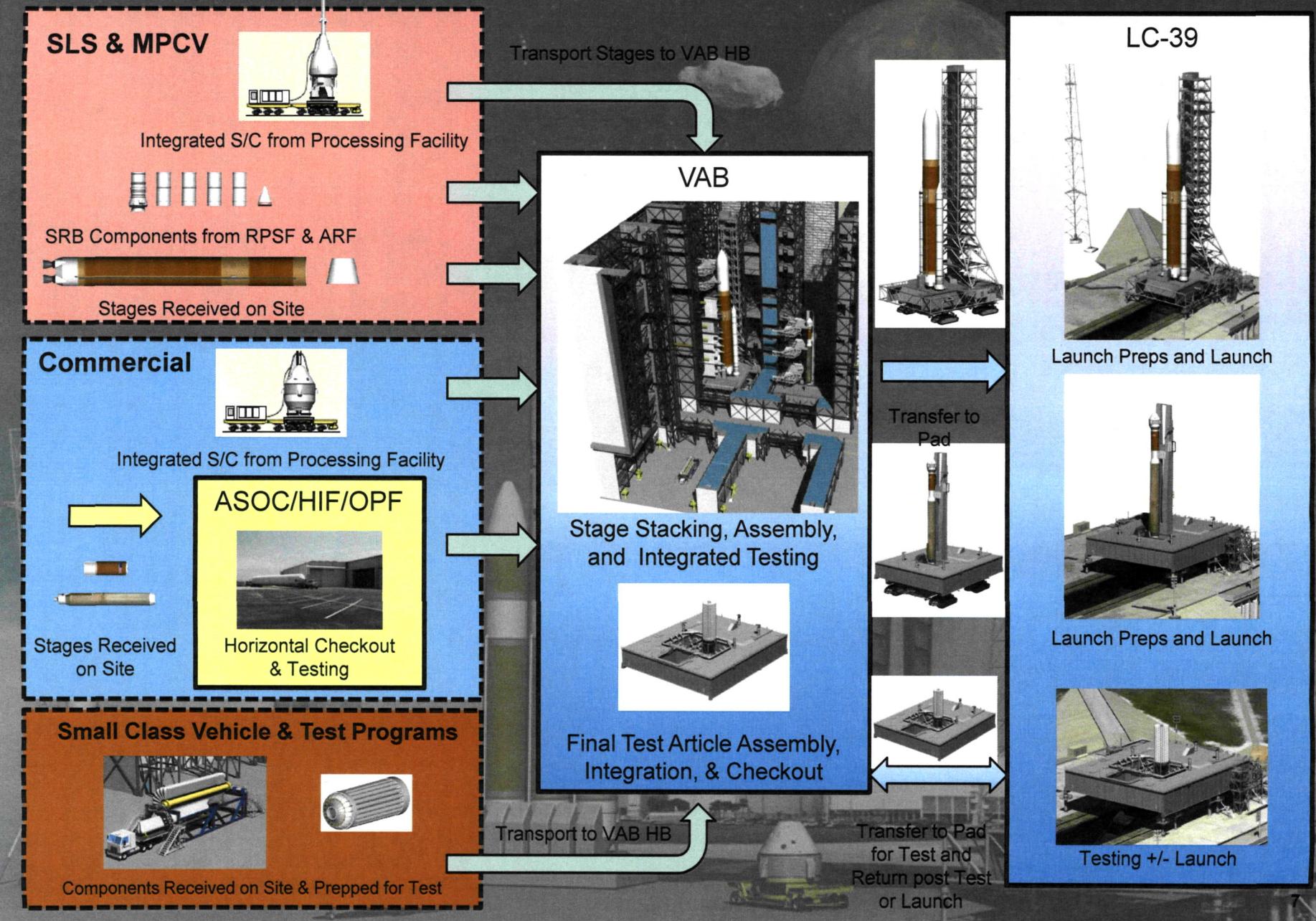
21st Century Space Launch Complex

A Launch Site for Every Vehicle



21st Century Space Launch Complex

Launch Complex 39 Concept of Operations

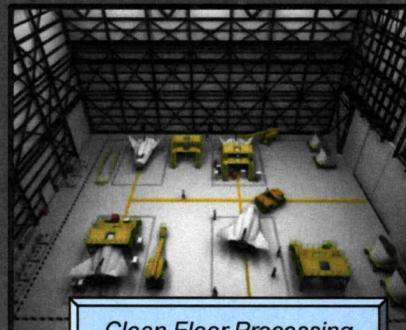


21st Century Space Launch Complex

A Flexible Approach



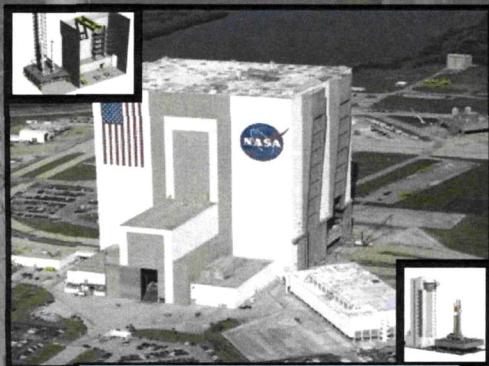
Horizontal Launch & Landing



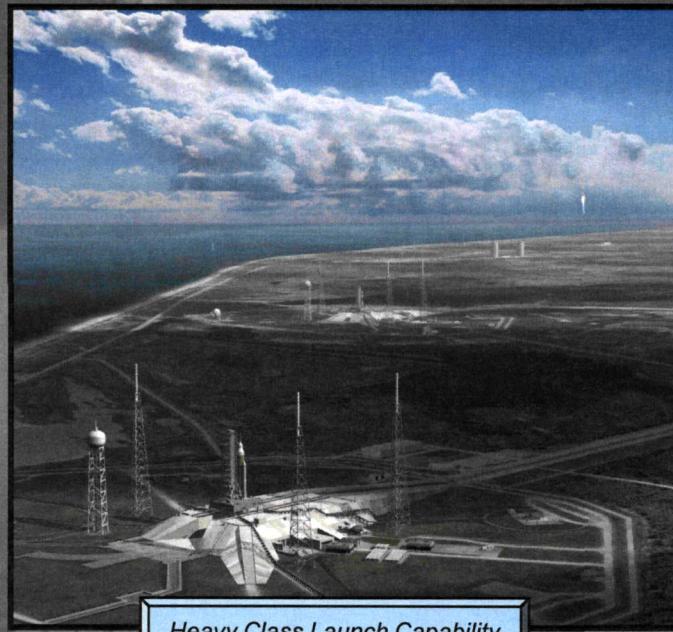
Clean Floor Processing



Small Vehicle Launch



Multi-Use Integration



Heavy Class Launch Capability



Flexible Launch Capability

21st Century Space Launch Complex Command & Control Strategy

Welcome to the Florida Spaceport

Today is Tuesday April 14, 2020

Commercial Crew launch from Pad 39-B to ISS at 8:47 AM ON TIME

Mars Communications Satellite launch from Pad 41 at 1:13 PM ON TIME

Commercial satellite launch from Pad 37 at 6:35 PM ON TIME

Tomorrow April 15, 2020

Space Hotel passenger launch from Pad 39-A at 11:00 AM ON TIME

Notice: Use of Virtual Reality sensory implants while traveling on Florida's Spaceport is illegal



Enabling Capabilities Catalog

Support SLS* Development & Test



*Space Launch System (SLS)

Customer PAD-B GSE

Transform Launch Control to small projects that provide basic capability when needed

Commercial Provided Capability

Government Furnished Enablers

Common Infrastructure (Government Furnished)

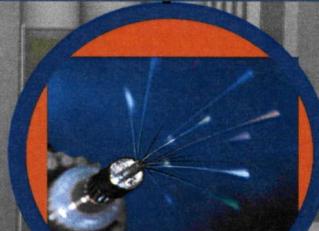
Continual Process of reducing O&M Costs

Unproven Technology

Payload Launch Experience

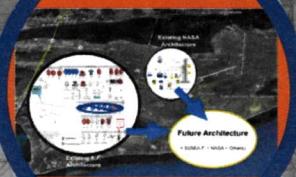
Critical Payload Launch Experience

Commercial Provider Maturity



Integrated Network Services

Increased Range Capacity & Flexibility



Virtual Customer

Customer Brings own C&C



Government Core Capabilities for safety and risk mitigation

21st Century Space Launch Complex Summary

- ◆ **Features of a 21st Century Space Launch Complex**

- Flexibility to support evolving launch vehicles and spacecraft
- Standard interfaces to support multiple customer needs
- Enhanced Range capacity and flexibility
- Reconfigurable processing areas and control rooms
- Revitalized infrastructure

- ◆ **KSC is open for Business**

- Continuing to work with industry to better understand needs and potential requirements
- Gaining understanding of evolving requirements from Commercial Customers
- Implementing technologies to overcome constraints for flexible, multi-use concepts and cost sharing
- Collaborating with NASA, DoD and commercial Programs